

PLANT COMMUNITIES FOR THE ELK RANGE
POINT REYES NATIONAL SEASHORE
SEPTEMBER 1981
Kimberly T. Lathrop

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Introduction

The elk range is the northernmost four square miles of Tomales (Pierce) Point, Point Reyes National Seashore. The peninsula expands from a point at its northern end to a southern boundary, some 1.5 miles (2.4 km) wide demarkated by a game proof fence. It is bounded to the east by Tomales Bay and to the west by the Pacific Ocean, the land dropping off in near vertical cliffs on both sides. Proximity to the ocean, and the prevailing westerly winds, has a noticable effect on the distribution of vegetation. Open grasslands with relatively few shrubs are present on the west wide. Shrubby vegetation reaches its greatest density in the southeast portion of the range, that area most protected from ocean winds. Similarly the west facing cliffs and canyons are sparsely vegetated relative to the east facing cliffs and canyons.

The vegetation of Tomales Point has been classified generally as a combination of Coastal Strand and Northern Coastal Scrub (Munz 1959) or Coastal Prairie Scrub (Kuchler 1977). Plant communities were described and mapped initially by Lauer (1972) as part of a survey of the entire Seashore. However, I found many of his plant communities were so general as to fail to permit distinction of marked plant or plant-soil associations on Tomales Point. In addition, many individual species described as indicative of certain plant communities simply do not occur at this northernmost extremity of the Seashore.

This report describes 17 plant communities by both species abundance and a combination of topography and location. Estimates of the range in percent composition of the most abundant plant species is given in each community. The distribution of each community is illustrated in Overlay I. The distribution of more localized plants, Overlay II, shows the distribution of plant

communities associated with unusual topographical features such as rocky outcroppings, stockponds, springs, and disturbed areas in addition to rare and endangered species of plants.

Methods

I became familiar with the elk range while conducting a vegetation study (composition and productivity) in connection with the Tule Elk Project. Thirty-six line transects of 200 points each were run in May of 1980 and June of 1981. All plants hit were identified and recorded. In addition any unknown plants were collected and identified. All identified plants have been compiled into a list which is included with this report (Appendix I).

The vegetation mapping was conducted at the end of September 1981. I started at the lower ranch walking along the ocean side to the end of the point. I walked back on the bay side. Stopping on hill tops, I was able to view a large area thus enabling me to delineate community boundaries. I also walked down into canyons, draws, etc. to check the vegetation. Using this basic method, I essentially covered the whole range. I used aerial photographs taken in 1974, placed acetate overlays on top, and then drew in the community boundaries. These boundaries were then transferred onto other acetate overlays corresponding to the Tomales, California quadrangle.

Results

The following is the plant communities found on the elk range. Obviously not all the plants can be listed in each community, only the most predominant are mentioned. Therefore a list of all plants collected and identified has been compiled with plant communities listed for each species (Appendix I).

Overlay I

BG-BACCHARIS GRASSLAND:

- 30-65% Baccharis pilularis
forbs (see OG for predominant types)
grasses (see OG for predominant types)

Baccharis Grassland mainly occurs on the bay, east side of the point and mainly on hill tops. The Baccharis is often prostrate, not more than ten inches tall, less frequently the shrubs are about 1½-4' tall.

BRG-BACCHARIS-REEDGRASS GRASSLAND:

- | | | | |
|--------|---------------------------------|--------|--------------------|
| 30-65% | <u>Baccharis pilularis</u> | 20-25% | forbs (see OG) |
| | <u>Calamagrostis nutkaensis</u> | | grasses (see OG) |
| | (Pacific Reedgrass) | | <u>Juncus</u> spp. |

As a transition Baccharis-Reedgrass Grassland occurs mainly between thick scrub and grasslands near hill tops. C. nutkaensis is a native bunch grass occurring in mainly moist areas. The presence of Juncus is also indicative of moisture. Although no spring is evident these two plants indicate the presence of water.

CC-COASTAL CANYON:

- | | | | |
|--------|--------------------------|-------|---|
| 10-80% | <u>Lupinus arboreus</u> | 0-30% | <u>Carduus pycnocephalus</u> |
| 10-50% | <u>Rubus spectabilis</u> | | <u>Cersium</u> spp. |
| 10-20% | bare ground | | <u>Baccharis pilularis</u> |
| | <u>Conium maculatum</u> | 0-5% | <u>Armeria maritima</u> |
| | grasses (see OG) | | var. <u>californica</u> |
| | <u>Heracleum lanatum</u> | | <u>Eriogonum latifolium</u> ssp. <u>nudum</u> |
| 5-15% | <u>Holcus lanatus</u> | | <u>Fragaria chiloensis</u> |
| | <u>Juncus</u> spp. | | <u>Grindelia stricta</u> |
| | <u>Stachys rigida</u> | | <u>Madia sativa</u> |
| 5-10% | <u>Equisetum</u> spp. | | |
| | <u>Marah fabaceus</u> | | |

Coastal Canyons are the densest vegetation found on the west side of the range. This community is moist much of the year. Most of the plants are about 1-3' tall. Some of the thistles, Heracleum lanatum, and berry grow up to 6' tall. A number of the Coastal Canyon areas have a high percentage of Rubus spectabilis.

CCB-COASTAL CLIFFS, HILLS AND BEACHES:

- | | | | |
|--------|--|-------|----------------------------|
| 10-90% | sand or exposed rock | 0-10% | <u>Cakile maritima</u> |
| 5-10% | <u>Eschscholzia californica</u> | | <u>Clarkia amoena</u> |
| 0-60% | <u>Lupinus arboreus</u> | | <u>Dudleya farinosa</u> |
| 0-30% | <u>Baccharis pilularis</u> | | <u>Eriogonum galucis</u> |
| 0-20% | <u>Eriogonum latifolium</u> | | grasses |
| | ssp. <u>nudum</u> | | <u>Plantago lanceolata</u> |
| | <u>Eriophyllum staechadifolium</u> | | <u>Pteridium aquilinum</u> |
| 0-15% | <u>E. lanatum</u> var. <u>arachnoideum</u> | | var. <u>lanuginosum</u> |
| | <u>Grindelia stricta</u> | 0-5% | <u>Fragaria chiloensis</u> |

CCB-COASTAL CLIFFS, HILLS AND BEACHES CONT'D:

0-10%	<u>Abronia latifolia</u> <u>Achillea borealis</u> <u>Artemesia pycnocephala</u>	0-5%	<u>Mesembryanthemum chiloensis</u> <u>Oenothera cheiranthifolia</u> <u>Spergularia macrotheca</u>
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The Coastal Cliffs, Hills and Beaches have been lumped together due to their transition from one to another, their location, on the ocean side of the point, and the small size of each. The cliffs have a 65-90% slope, less vegetation and lower growing plants. The hills are not as steep, 50-65% slope, have more vegetation and shrubs, and have taller growing plants. The beaches are comparatively flat, also having low growing plants and range of vegetation density. In this plant community the plants tend to be succulent and often late flowering (Munz 1959).

CS-COASTAL SCRUB:

70-90%	<u>Baccharis pilularis</u>	0-5%	<u>Artemesia Douglasiana</u>
5-20%	bare ground <u>Mimulus aurantiacus</u> <u>Polystichum munitum</u> <u>Rubus</u> spp.		<u>Anaphlis margaritacea</u> <u>Galium</u> spp. <u>Gnaphalium californica</u> <u>Pteridium aquilinum</u> var. <u>lanuginosum</u> <u>Satureja Douglasii</u>
5-10%	<u>Ceanothus thyrsiflorus</u> <u>Osmaronia cerasiformis</u>		

The Coastal Scrub occurs on hillsides above the Thick Scrub (TS). It is separated from the Thick Scrub because there are no tree species and the vegetation is under 6' tall.

FM-FRESHWATER MARSH:

30-80%	<u>Holcus lanatus</u> <u>Conium maculatum</u>	0-10%	<u>Potentilla egedei</u> var. <u>grandis</u> <u>Stachys rigida</u>
0-30%	<u>Hydrocotyle ranunculoides</u> <u>Juncus</u> spp.	0-5%	<u>Heracleum lanatum</u> <u>Mimulus guttatus</u> <u>Oenanthe sarmentosa</u>
0-10%	<u>Cersium</u> spp. <u>Cotula coronopifolia</u>		

Freshwater Marshes occur around stock ponds, springs and moist areas. Hydrocotyle ranunculoides is found growing in water. And probably Potamogeton spp. and Lemna spp. can be found growing in the water, although none were identified. Holcus lanatus, Conium maculatum, and Cersium spp. grow where there is the least amount of moisture in this plant community. The other plants listed grow in moist areas.

IG-IRIS GRASSLAND:

30-80%	grasses (see OG)	20-40%	<u>Iris Douglasiana</u>
30-50%	forbs (see OG)	10-20%	<u>Amsinkia intermedia</u>

There are distinct areas, mainly on hill tops, with a larger percentage of Iris than in open grassland thus the reason for the separation. Associating with the Iris is Amsinkia intermedia.

LG-LUPINE GRASSLAND:

30-65% forbs (see OG)
grasses (see OG)

30-65% Lupinus arboreus

Lupine Grassland is found mainly on hill tops and north facing slopes. Lupinus arboreus seems to be a short lived perennial. Many areas just last year (1980) would have been classified as Lupine Grassland but now few of the plants are alive. These areas have thus been classified as Open Grassland. Over the year and a half here, I've noted that the Lupinus arboreus plants are not being replaced as quickly as they are dying. The larvae of the Swift Moth, Heptialus behrensi, hollows out the roots of the lupine causing many to die each year. Sometimes even large patches of the shrub will die at the same time (Michael G. Barbour, et. al. 1973). This may be the explanation for the deaths of the lupines.

LIG-LUPINE-IRIS GRASSLAND:

30-65% forbs (see OG)
grasses (see OG)

30-65% Lupinus arboreus
10-20% Iris Douglasiana

Lupine-Iris Grassland occurs near the end of the point on the bay side. There is again an unusually high percentage of Iris which is not seen in Lupine Grassland.

LPG-LUPINE-PHACELIA GRASSLAND:

30-40% Lupinus arboreus
20-35% Phacelia distans
10-20% grasses
5-30% sand
5-15% Achillea borealis
var. californica

0-20% Eriophyllum staechadifolium
0-10% Chorizanthe cuspidata
0-5% Cersium occidentale
Oenothera cheiranthefolia

Lupine-Phacelia Grassland occurs only at the north end of the point. There is a high percentage of sand and Phacelia distans. Other sand liking plants occur here.

OG-OPEN GRASSLAND:

20-40% Bromus mollis
B. rigidus
Festuca dertonensis
Hordeum leporinum
Plantago lanceolata
10-30% Avena barbata
Hordeum brachyantherum
Lolium multiflorum
L. perenne
Rumex acetosella
5-20% Aira caryophylla
Bromus carinatus
Holcus lanatus
5-15% Stipa pulchra

0-20% Fragaria chiloensis
Hypochoris glabra
H. radicata
Iris Douglasiana
Lotus spp.
Lupinus arboreus
Lupinus spp.
Marah fabaceus
Madia sativa
Montia perfoliata
Oenothera ovata
Pteridium aquilinum
var. lanuginosum
Rhus diversiloba

OG-OPEN GRASSLAND CONT'D:

0-20% Achillea borealis
 var. californica
Amsinkia intermedia
Baccharis pilularis
Eschscholzia californica

0-20% Rubus spp.
Trifolium spp.
Vicia spp.
Viola adunca

The elk range used to be a cattle ranch thus most of the Open Grassland is introduced annual grasses. Fence lines can be seen in the 1974 aerial photographs. Most of the Open Grasslands are within these once fenced areas where the cattle grazed. Since the cattle have been removed (1979) many native species have come back in greater numbers. For instance, Stipa pulchra, a native bunch grass, was not seen in 1980. This year, though, 1981, Stipa pulchra was seen, mainly on hillsides, in relatively high percentages. Many forbs also occur in the Open Grassland. These too are mainly introduced annuals.

S-SAND:

95-100% sand

0-5% Lupinus arboreus

This area has many uplifted beaches accounting for the patches of sand (Akeson, pers. comm.). Most have been taken over by vegetation although some areas of sand still are present with Lupinus arboreus being the first to move in.

SM-SALT MARSH:

20-40% Salicornia virginica
Distichlis spicata
 var. stolonifera

5-10% sedges

0-5% Cuscuta salina var. major
Jaumea carnosa
Monerma cylindrica

All the Salt Marshes that occur on the range are on the bay side.

TS-THICK SCRUB:

15-40% bare ground
 5-35% Myrica californica
Pteridium aquilinum
 var. lanuginosum
Rhus diversiloba
Rubus spp.
Salix spp.
 5-15% Artemesia Douglasiana
Heracleum lanatum
Marah fabaceus
Mimulus aurantiacus
 0-35% Baccharis pilularis
Conium maculatum
 0-20% Holcus lanatus
Polystichum munitum

0-10% Ceanothus thyrisflorus
Lonicera spp.
Vaccinium ovatum
 0-5% Anaphalis margaritacea
Artemesia californica
Erechtites prenanthoides
Gaultheria Shallon
Holodiscus discolor
Osmoronia cerasiformis
Sambucus callicarpa
Satureja Douglasii
Symphoricarpos rivularis
Scrophularia californica

TS-THICK SCRUB CONT'D:

Thick Scrub does not occur until two mile south of the north end of the point and only on the bay side. The shrubs and some forbs are from about 3' to 10-20+' tall. The vegetation is very dense and almost impenetrable. Most of the shrubs are evergreen.

Overlay II

RO-ROCK OUTCROPPINGS:

60-90%	rock	0-10%	<u>Rubus ursinus</u>
10-20%	<u>Berberis pinnata</u>	0-5%	<u>Arabis blepharophylla</u>
0-10%	<u>Eriophyllum staechadifolium</u>		<u>Dudleya farinosa</u>
	<u>Rhus diversiloba</u>		<u>Gaultheria Shallon</u>

Rock Outcroppings occur on ridge tops and some hillsides. Most of the plants are either prostrate or succulent. It is a unique plant community in that some plants don't occur any where else. For instance Arabis blepharophylla, a threatened plant (Federal Registrar 1980), is found in many of these rock outcroppings. These rock outcroppings are slowly eroding and will eventually become a part of the surrounding communities.

E-EXOTIC TREES AND SHRUBS:

100%	<u>Eucalyptus Globulus</u>	100%	ornamental shrubs
	<u>Cupressus Sargentii</u>		

These are introduced plants, not native to the area. The ornamentals occur around the Upper Pierce Ranch and a few are still around where the Lower Pierce Ranch use to be.

SS-STOCKPONDS AND SPRINGS:

Associated with the stockponds and springs are mainly two plant communities, Freshwater Marsh and Coastal Canyon.

DISTURBED AND WASTE AREAS:

In addition to these plant communities there are many disturbed and waste areas mainly found along road and trail sides. Much of the Upper Pierce Ranch yard contains many of these disturbed plants. These plants are listed in Appendix I.

Summary

The vegetation of the northernmost four square mile of Tomales Point has been classified with respect to species abundance, topography, and location. Relative to these factors and conditions present on the elk range, I feel that these plant communities are true, distinct associations of species. Seventeen plant communities have been described in the report and mapped on overlays I and II. These maps and descriptions should provide baseline information in which changes in composition and distribution of communities can be compared in the future.

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APPENDIX I

PLANT LIST FOR THE TULE ELK RANGE
POINT REYES NATIONAL SEASHORE
MAY 1980-SEPTEMBER 1981

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<u>Scientific name</u>	<u>Common name</u>	<u>Plant Communities</u>
EQUSETACEAE	HORSETAIL FAMILY	
<u>Equisetum</u> sp.	Horsetail	CC,FM,TS
PTERIDACEAE		
<u>Pteridium aquilinum</u> var. <u>lanuginosum</u>	Bracken Fern	BG,CC,CCB,CS,IG, LIG,LG,LPG,OG,TS
ASPIDACEAE		
<u>Athyrium Filix-femina</u> var. <u>stichense</u>	Lady Fern	CS,TS
<u>Dryopteris arguta</u>	Coastal Wood Fern	CS,TS
<u>Polystichum munitum</u>	Western Sword Fern	CS,TS
POLYPODIACEAE		
<u>Polypodium californicum</u> var. <u>Kaulfussi</u>	California Polypody	RO
PINACEAE	PINE FAMILY	
<u>Pinus muricata</u>	Bishop Pine	TS
CUPRESSACEAE	CYPRESS FAMILY	
<u>Cupressus Sargentii</u>	Sargent Cypress	E
RANUNCULACEAE	CROWFOOT FAMILY	
<u>Delphinium decorum</u>	Coast Larkspur	BG,LG,OG
<u>Ranunculus californicus</u>	California Buttercup	BG,LG,OG
BERBERIDACEAE	BARBERRY FAMILY	
<u>Berberis pinnata</u>	California Barberry	RO
MALVACEAE	MALLOW FAMILY	
<u>Malva nicaeensis</u>	Bull Mallow	Disturbed areas
<u>Sidalcea malvaeflora</u>	Checker Bloom	BG,LG,OG
GERANIACEAE	GERANIUM FAMILY	
<u>Erodium cicutarium</u>	Red-stemmed Filaree	BG,LG,OG
<u>E. moschatum</u>	White-stemmed Filaree	BG,LG,OG
<u>Geranium dissectum</u>	Cut-leaved Geranium	BG,LG,OG
<u>G. molle</u>	Dove's-foot Geranium	BG,LG,OG
OXALIDACEAE	WOOD-SORREL FAMILY	
<u>Oxalis corniculata</u>	Creeping Wood-sorrel	BG,LG,OG
<u>O. Pes-caprae</u>	Bermuda-buttercup	BG,LG,OG
<u>O. pilosa</u>	Hairy Wood-sorrel	BG,LG,OG

PLANT LIST FOR THE TULE ELK RANGE CONT'D

<u>Scientific name</u>	<u>Common name</u>	<u>Plant Communities</u>
LIMNANTHACEAE	MEADOW FOAM FAMILY	
<u>Limnanthes Douglasii</u>	Common Meadow Foam	BG, LG, OG
LINACEAE	FLAX FAMILY	
<u>Linum perenne</u>	Flax	BG, LG, OG
EUPHORBIACEAE	SPURGE FAMILY	
<u>Euphorbia Lathyris</u>	Caper Spurge	FM
<u>E. Peplus</u>	Petty Spurge	Pierce Ranch yard
VIOLACEAE	VIOLET FAMILY	
<u>Viola adunca</u>	Western Dog Violet	BG, IG, LG, OG
HYPERICACEAE	ST. JOHN'S-WORT FAMILY	
<u>Hypericum anagalloides</u>	Tinker s Penny	FM
PAPAVERACEAE	POPPY FAMILY	
<u>Eschscholzia californica</u>	California Poppy	BG, CC, CCB, IG, FM, LG, LG, LPG, OG, RO
<u>Platystemon californicus</u>	Cream Cup	BG, IG, LG, LG, OG
FUMARIACEAE	FUMEWORT FAMILY	
<u>Dicentra formosa</u>	Pacific Bleeding Heart	TS
CRUCIFERAE	MUSTARD FAMILY	
<u>Arabis blepharophylla</u>	Coast Rock Cress	RO
<u>Brassica campestris</u>	Common Mustard	OG, waste places
<u>B. hirta</u>	White Mustard	OG, waste places
<u>Cakile maritima</u>	Sea Rocket	CCB
<u>Capsella Bursa-pastoris</u>	Shepherd's Purse	OG, waste places
<u>Cardamine oligosperma</u>	Few-seeded Bitter-cress	CC
<u>Coronopus diaymus</u>	Lesser Wart-cress	Disturbed areas
<u>Dentaria californica</u>	California Toothwort	OG
<u>Erysimum concinnum</u>	Coast Wallflower	LPG
<u>Lepidium nitidum</u>	Shinning Pepper-grass	Disturbed areas
<u>L. oblongum</u>	Wayside Pepper-grass	Disturbed areas
<u>Lobularia maritima</u>	Sweet Alyssum	Waste places
<u>Nasturtium officinale</u>	Water Cress	CC, CS
<u>Raphanus sativus</u>	Wild Radish	OG, waste places
<u>Sisymbrium officinale</u>	Hedge Mustard	OG, disturbed areas
CARYOPHYLLACEAE	PINK FAMILY	
<u>Cardionema ramosissima</u>		LPG, road sides
<u>Cerastium arvense</u>	Meadow Chickweed	CC, CCB, CS, OG, TS
<u>C. viscosum</u>	Mouse Ear Chickweed	OG, waste places
<u>Silene gallica</u>	Common Catchfly	BG, LG, OG
<u>Spergula arvensis</u>	Spurry	Road sides
<u>Spergularia macrotheca</u>	Large-flowered Sand Spurry	CCB
<u>S. rubra</u>	Purple Sand Spurry	Road sides
<u>Stellaria Jamesiana</u>	Sticky Starwort	BG, LG, OG
<u>S. media</u>	Common Chickweed	BG, CS, LG, LG, TS

PLANT LIST FOR THE TULE ELK RANGE CONT'D

<u>Scientific name</u>	<u>Common name</u>	<u>Plant Communities</u>
PORTULACACEAE	PORTULANE FAMILY	
<u>Calandrinia cilata</u>	Red Maids	CC,OG, waste places
var. <u>Menziesii</u>		
<u>Montia perfoliata</u>	Miner's Lettuce	BG,CC,CS,LG,TS
<u>M. spathulata</u>	Common Montia	BG,LG,OG
AIZOACEAE	CARPET-WEED FAMILY	
<u>Mesembryanthemum chilense</u>	Sea Fig	CCB
<u>Tetragonia expansa</u>	New Zealand Spinach	Pierce Ranch yard
POLYGONACEAE	BUCKWHEAT FAMILY	
<u>Chorizanthe cuspidata</u>	Spine Flower	LG,LPG
<u>Eriogonum latifolium</u>	Naked-stemmed Eriogonum	
ssp. <u>nudum</u>		CC,CCB,OG,RO
<u>Polygonum aviculare</u>	Yard Knotweed	Pierce Ranch yard
<u>Pterostegia drymarioides</u>		CS,TS
<u>Rumex Acetosella</u>	Sheep Sorrel	BG,CC,CS,IG,FM,
		LIG,LG,OG,TS
<u>R. crispus</u>	Curly-leaved Dock	CC,FM
CHENOPODIACEAE	GOOSEFOOT FAMILY	
<u>Chenopodium californicum</u>	California Goosefoot	FM
<u>Salicornia virginica</u>	Pickleweed	SM
NYCTAGINACEAE	FOUR-O'CLOCK FAMILY	
<u>Abronia latifolia</u>	Yellow Sand Verbena	CCB
<u>A. umbellata</u>	Beach Sand Verbena	CCB
PRIMULACEAE	PRIMROSE FAMILY	
<u>Anagallis arvensis</u>	Scarlet Pimpernel	CS,FM, waste places
PLANTAGINACEAE	PLANTAIN FAMILY	
<u>Plantago Hookeriana</u>	California Plantain	OG
<u>P. juncoides</u>	Pacific Seaside Plantain	SM
<u>P. lanceolata</u>	English Plantain or Ribwort	BG,CC,CS,FM,IG,
		LIG,LG,OG,TS
<u>P. major</u>	Common Plantain	CC,FM
PLUMBAGINACEAE	PLUMBAGO or LEADWORT FAMILY	
<u>Armeria maritima</u>	California Thrift	CCB,OG
var. <u>californica</u>		
ERICACEAE	HEATH FAMILY	
<u>Gaultheria Shallon</u>	Sala	CS,RO,TS
<u>Vaccinium ovatum</u>	California Huckleberry	CS,TS
APOCYNACEAE	DOGBANE FAMILY	
<u>Vinca major</u>	Periwinkle	Pierce Ranch yard
CONVOLVULACEAE	MORNING GLORY FAMILY	
<u>Convolvulus occidentalis</u>	Western Morning Glory	CC,CCB,OG

PLANT LIST FOR THE TULE ELK RANGE CONT'D

<u>Scientific name</u>	<u>Common name</u>	<u>Plant Communities</u>
CUSCUTACEAE	DODDER FAMILY	
<u>Cuscuta salina</u> var. <u>major</u>	Salt Marsh or Alkali Dodder	SM
POLEMONIACEAE	PHLOX FAMILY	
<u>Gilia capitata</u> ssp. <u>Chamissonis</u>	Blue Field Gilia California Gilia	OG OG
<u>G. achilleaefolia</u>		
<u>Linanthus androsaceus</u>	Common Linanthus	BG, LG, OG
<u>Navarretia squarrosa</u>	Skunk Weed	OG, disturbed areas
<u>Polemonium careum</u>	Great Polemonium	BG, CS, LG, OG, TS
HYDROPHYLLACEAE	WATERLEAF FAMILY	
<u>Nemophila Menziesii</u>	Baby Blue-eyes	BG, LG, OG
<u>Phacelia californica</u>	California Phacelia	LG
<u>P. malvifolia</u>	Stinging Phacelia	OG
<u>P. distans</u>	Common Phacelia	LPG
BORAGINACEAE	BORAGE FAMILY	
<u>Amsinkia intermedia</u>	Common or Rancher's Fiddleneck	BG, CCB, IG, LIG, LG, OG
<u>A. spectabilis</u>	Seaside Amsinkia	BG, LG, OG
<u>Plagiobothrys</u> sp.	Popcorn Flower	LG
SOLANACEAE	NIGHTSHADE or POTATO FAMILY	
<u>Solanum nigrum</u>	Black Nightshade	OG, waste places
<u>S. nodiflorum</u>	Small-flowered Nightshade	CC, waste places
<u>S. sarachoides</u>	Hairy Nightshade	OG, waste places
SCROPHULARIACEAE	FIGWORT FAMILY	
<u>Castilleja franciscana</u>	Franciscan Indian Paint-brush	TS
<u>C. Wightii</u> ssp. <u>inflata</u>	Wight's Indian Paint-brush	BG, CS, LG, OG, TS
<u>Digitalis purpurea</u>	Fox Glove	CC
<u>Mimulus aurantiacus</u>	Orange Bush Monkey Flower	CS, TS
<u>M. guttatus</u>	Common Large Monkey Flower	CC, FM
<u>Orthocarpus floribundus</u>	San Francisco Orthocarpus	BG, LG, OG
<u>O. pusillus</u>	Dwarf Orthocarpus	OG, road sides
<u>Scrophularia californica</u>	California Figwort	CS, TS
<u>Veronica americana</u>	American Brooklime	CC, FM
<u>V. Anagallis-aquatica</u>	Great Water Speedwell	CC, FM
LABIATAE	MENTH FAMILY	
<u>Monardella villosa</u> var. <u>franciscana</u>	Coyote Mint	BG, LG, OG
<u>Prunella vulgaris</u> ssp. <u>lanceolata</u>	Self-heal	BG, LG, OG
<u>Satureja Douglasii</u>	Yerba Buena	CS, TS
<u>Stachys bullata</u>	California Hedge Nettle	CS, TS
<u>S. rigida</u>	Rigid Hedge Nettle	BG, CC, CS, IG, FM, LIG, LG, OG, TS
CRASSULACEAE	STONECROP FAMILY	
<u>Dudleya farinosa</u>	Powdery Dudleya or Live-forever	CCB, RO
<u>Sedum spathulifolium</u>	Pacific Stonecrop	CCB, RO

PLANT LIST FOR THE TULE ELK RANGE CONT'D

<u>Scientific name</u>	<u>Common name</u>	<u>Plant Communities</u>
CRASSULAECEA	STONECROP FAMILY	
<u>Tillaea aquatica</u>	Pigmy-weed	OG
SAXIFRAGACEAE	SAXIFRAGE FAMILY	
<u>Heuchera pilosissima</u>	Seaside Heuchera	Road cut
<u>Lithophragma heterophylla</u>	Hill or Woodland Star	OG
<u>Ribes Menziesii</u>	Canyon Gooseberry	CS,TS
<u>R. sanguineum</u>	Red Flowering Current	CS,TS
var. <u>glutinosum</u>		
<u>Tellima grandiflora</u>	Fringe Cup	Road cut
ROSACEAE	ROSE FAMILY	
<u>Acaena californica</u>	California Acaena	BG,LG,OG
<u>Fragaria chiloensis</u>	Beach Strawberry	BG,CCB,IG,LIG,LG,OG
<u>Heteromeles arbutifolia</u>	Toyon or Christmas-berry	CS,TS
<u>Holodiscus discolor</u>	Ocean Spray or Cream Bush	CS,TS
<u>Horkelia californica</u>	California Horkelia	BG,LG,OG
<u>Osmaronia cerasiformis</u>	Osoberry	CS,TS
<u>Physocarpus capitatus</u>	Pacific Ninebark	TS
<u>Potentilla Egedei</u>	Silverweed or Cinquefoil	CC,FM
var. <u>grandis</u>		
<u>P. glandulosa</u>	Sticky Cinquefoil	CC,FM,OG
<u>Rosa californica</u>	California Rose	TS
<u>Rubus parviflorus</u>	Thimble Berry	CC,CS,TS
<u>R. spectabilis</u>	Salmon Berry	CC,CS,TS
<u>R. ursinus</u>	California Blackberry	BG,CC,CCB,CS,IG, LIG,LG,OG,TS,RO
<u>R. vitifolius</u>	California Blackberry	BG,CC,CCB,CS,IG, LIG,LG,OG,TS,RO
<u>Sanguisorba minor</u>	Burnet	OG
LEGUMINOSAE	PEA FAMILY	
<u>Lathyrus Jepsonii</u>	Jepson's or Tule Pea	BG,LG,OG
<u>Lotus formosissimus</u>	Coast Lotus or Trefoil	BG,LG,OG
<u>L. humistratus</u>	Short-podded Lotus	BG,LG,OG
<u>Lupinus arboreus</u>	Yellow-flowered Bush Lupine	CC,LIG,LG,LPG
<u>L. bicolor ssp. umbellatus</u>	Lindley's Annual Lupine	BG,LG,OG
<u>L. variicolor</u>	Lindley's Varied Lupine	BG,LG,OG
<u>Medicago arabica</u>	Spotted Bur-clover	BG,LG,OG
<u>M. hispida</u>	Bur-clover	BG,LG,OG
<u>Trifolium gracilentum</u>	Pinpoint Clover	BG,LG,OG
<u>T. Macraei</u>	McCrae's or Double-headed Clover	BG,LG,OG
<u>T. procumbens</u>	Low Hop Clover	BG,LG,OG
<u>T. tridentatum</u>	Tom Cat Clover	BG,LG,OG
<u>T. Wormskioeldii</u>	Clover	BG,LG,OG
<u>Vicia americana</u>	American Vetch	BG,LG,OG
ssp. <u>oregana</u>		
<u>V. californica</u>	California Vetch	BG,LG,OG
<u>V. hirsuta</u>	Hairy Vetch or Tare	BG,LG,OG
<u>V. sativa</u>	Common or Spring Vetch	BG,LG,OG
MYRICACEAE	BARBERRY or WAX-MYRTLE FAMILY	
<u>Myrica californica</u>	California Wax-myrtle	TS

PLANT LIST FOR THE TULE ELK RANGE CONT'D

<u>Scientific name</u>	<u>Common name</u>	<u>Plant Communities</u>
<u>SALICACEAE</u>	<u>WILLOW FAMILY</u>	
<u>Salix Hindsiana</u>	Sandbar Willow	TS
<u>URTICACEAE</u>	<u>NETTLE FAMILY</u>	
<u>Hesperocnide tenella</u>	Western Nettle	CS,TS
<u>Urtica californica</u>	Coast or California Nettle	CS,TS
<u>LYTHRACEAE</u>	<u>LOOSESTRIFE FAMILY</u>	
<u>Lythrum Hyssopifolia</u>	Hyssop Loosestrife	CC,FM
<u>ONAGRACEAE</u>	<u>EVENING-PRIMROSE FAMILY</u>	
<u>Clarkia amoena</u>	Farewell-to-Spring	CCB,OG
<u>Epilobium sp.</u>	Fireweed	CC,FM,TS
<u>Oenothera cheiranthifolia</u>	Beach Primrose	CCB,LPG
<u>O. ovata</u>	Sun Cup	BG,IG,LIG,LG,OG
<u>MYRTACEAE</u>	<u>MYRTLE FAMILY</u>	
<u>Eucalyptus Globulus</u>	Blue Gum	E
<u>RHAMNACEAE</u>	<u>BUCKTHORN FAMILY</u>	
<u>Ceanothus thyrsiflorus</u>	Blue-blossom	CS,TS
<u>Rhamnus californica</u>	California Coffeeberry	TS
<u>HIPPOCASTANACEAE</u>	<u>BUCKEYE FAMILY</u>	
<u>Aesculus californica</u>	California Buckeye or Horse-chestnut	TS
<u>ANACARDIACEAE</u>	<u>SUMAC FAMILY</u>	
<u>Rhus diversiloba</u>	Poison Oak	BG,BRG,CC,CS,IG, LIG,LG,LPG,OG,RO,TS
<u>UMBELLIFERAE</u>	<u>CARROT FAMILY</u>	
<u>Apium graveolens</u>	Celery or Smallage	CC,FM,OG
<u>Conium maculatum</u>	Poison Hemlock	BG,CC,CS,FM,IG, LIG,LG,OG,TS
<u>Daucus pusillus</u>	Rattlesnake Weed	BG,IG,LIG,LG,OG
<u>Eryngium armatum</u>	Prickly Eryngo or Coyote-thistle	FM
<u>Foeniculum vulgare</u>	Sweet Fennel	Road side
<u>Heracleum lanatum</u>	Cow-parsnip	BG,CC,CS,FM,IG, LIG,LG,OG,TS
<u>Hydrocotyle ranunculoides</u>	Floating Marsh-pennywort	FM,SS
<u>Oenanthe sarmentosa</u>	Pacific or American Oenanthe	CC,FM
<u>Sanicula artopoides</u>	Bear's-foot Sanicle or Snake-root	BG,LG,OG
<u>S. crassicaulis</u>	Pacific Sanicle	CS,TS
<u>Scandix Pecten-Veneris</u>	Shepherd's Needle	BG,LG,OG
<u>GARRYACEAE</u>	<u>SILK-TASSEL FAMILY</u>	
<u>Garrya elliptica</u>	Coast Silk-tassel	CS,TS
<u>RUBIACEAE</u>	<u>MADDER FAMILY</u>	
<u>Galium Aparine</u>	Cleavers or Goose Grass	CC,CS,TS

PLANT LIST FOR THE TULE EKL RANGE CONT'D

<u>Scientific name</u>	<u>Common name</u>	<u>Plant Communities</u>
<u>Galium californicum</u>	California Bedstraw	CC,CS,TS
<u>Sherardia arvensis</u>	Blue Field Madder	BG,LG,OG
CAPRIFOLIACEAE	HONEYSUCKLE FAMILY	
<u>Lonicera hispidula</u>	Hairy Honeysuckle	CS,TS
var. <u>vacillans</u>		
<u>L. involucrata</u>	Black Twin-berry	CS,TS
<u>Sambucus callicarpa</u>	Coast Red Elderberry	TS
<u>Symphoricarpos rivularis</u>	Common Snowberry	CS,TS
VALERIANACEAE	VALERIAN FAMILY	
<u>Plectritis</u> sp	Plectritis	TS
CUCURBITACEAE	GOURD FAMILY	
<u>Marah fabaceus</u>	Wild Cucumber or Man-root	BG,CC,CS,IG,LIG, LG,LPG,OG,TS
COMPOSITAE	SUNFLOWER FAMILY	
Heliantheae Tribe	Sunflower Tribe	
<u>Layia platyglossa</u>	Tidy Tips	BG,LG,OG
<u>Franseria chamissonis</u>	Beach-bur	FM
ssp. <u>bipinnatisecta</u>		
<u>Madia sativa</u>	Coast Tarweed	BG,CCB,IG,LIG,LG,OG
<u>Wyethia angustifolia</u>	Narrow-leaved Mule-ears	OG
Helenieae Tribe	Sneezeweed Tribe	
<u>Baeria minor</u> ssp. <u>maritima</u>	Goldfields	BG,LG,OG
<u>Blennosperma nanum</u>	Common Blennosperma	OG
var. <u>robustum</u>		
<u>Eriophyllum lanatum</u>	Common Wolly Sunflower	CC,CCB,RO
var. <u>arachnoideum</u>		
<u>E. staechadifolium</u>	Seaside Wolly Sunflower or Lizard Tail	CCB,LPG,RO
<u>Jaumea carnosa</u>	Fleshy Jaumea	SM
<u>Lasthenia glabrata</u>	Yellow-rayed Lasthenia	BG,LG,OG
Astereae Tribe	Aster Tribe	
<u>Aster chilensis</u>	Common California Aster	OG
<u>Baccharis pilularis</u>	Coyote Brush	BG,BRG,CC,CCB,CS,TS
<u>Corethrogyne californica</u>	California Corethrogyne	BG,LG,OG
<u>Conyza canadensis</u>	Horseweed	BG,LG,OG
<u>Erigeron glaucus</u>	Seaside Daisy	CC,CCB,RO
<u>Grindelia stricta</u>	Pacific Grindelia	CC,CCB
ssp. <u>venulosa</u>		
Anthemideae Tribe	Mayweed Tribe	
<u>Achillea borealis</u>	Yarrow	BG,CC,CCB,CS,IG, LIG,LG,LPG,OG,TS
ssp. <u>californica</u>		
<u>Artemisia californica</u>	Coast Sagebrush	CS,TS
<u>A. Douglasii</u>	Douglas Mugwort	CC,CS,TS
<u>A. pycnocephala</u>	Beach Sagewort	CCB,LPG
<u>Chrysanthemum segetum</u>	Corn Chrysanthemum	FM

PLANT LIST FOR THE TULE ELK RANGE CONT'D

<u>Scientific name</u>	<u>Common name</u>	<u>Plant Communities</u>
COMPOSITAE	SUNFLOWER FAMILY	
Anthemideae Tribe	Mayweed Tribe	
<u>Cotula coronopifolia</u>	Brass Buttons	FM,SS
<u>Matricaria matricarioides</u>	Pineapple Weed	Disturbed areas
Senecioneae Tribe	Groundsel Tribe	
<u>Erechtites prenanthoides</u>	Toothed Coast Fireweed	CC,CS,TS
<u>Senecio mikanoides</u>	German Ivy	FM, Pierce Ranch yard
<u>S. vulgaris</u>	Common Groundsel or Old Man-in-the Spring	BG,CC,CS,LG,LPG,OG,TS
Inuleae Tribe	Everlasting Tribe	
<u>Anaphalis margaritacea</u>	Pearly Everlasting	CS,TS
<u>Gnaphalium californicum</u>	California Cudweed	CS,TS
<u>G. ramosissimum</u>	Pink Everlasting	CS,TS
Cynareae Tribe	Thistle Tribe	
<u>Carduus pycnocephalis</u>	Italian Thistle	BG,CC,CS,FM,IG,LIG,LG,OG,TS
<u>C. tenuiflorus</u>	Slender-flowered Thistle	OG
<u>Cirsium occidentale</u>	Cobweb Thistle	BG,CC,CS,LG,LPG,OG,TS
<u>C. quercetorum</u>	Brownie Thistle	BG,CC,CS,IG,LG,OG,TS
<u>C. vulgare</u>	Common or Bull Thistle	BG,LG,OG
<u>Silybum marianum</u>	Milk Thistle	CC,CS,FM,OG,TS
Cithorieae Tribe	Chicory Thiribe	
<u>Hypochoeris glabra</u>	Smooth Cat's-ear	BG,CC,CCB,FM,IG,LG,OG
<u>H. radicata</u>	Hairy Cat's-ear	BG,CC,CCB,FM,IG,LG,OG
<u>Sonchus arvensis</u>	Perennial Sow-thistle	BG,CC,CS,FM,IG,LIG,LG,LPG,OG,TS
<u>S. asper</u>	Prickly Sow-thistle	BG,CC,CS,FM,IG,LIG,LG,LPG,OG,TS
ZOSTERACEAE	EEL GRASS FAMILY	
<u>Zostera marina</u>	Eel Grass	SM
LILIACEAE	LILY FAMILY	
<u>Calochortus Tolmiei</u>	Tolmie's Star Tulip	OG
<u>Chlorogalum pomeridianum</u>	Common Soap Plant	OG
<u>Fritillaria lanceolata</u>	Mission Bells	IG,OG
var. <u>tristulis</u>		
<u>Lilium pardalinum</u>	Leopard Lily	CC,FM
<u>Smilacina racemosa</u>	Western Solomon's Seal	CS,TS
var. <u>amplexicaulis</u>		
<u>S. stellata</u> var. <u>sessilifolia</u>	Nuttal's Solomon's Seal	CS,TS
ARACEAE	ARUM FAMILY	
<u>Zantedeschia aethiopica</u>	Calla Lily	CC,Pierce Ranch yard

PLANT LIST FOR THE TULE ELK RANGE CONT'D

<u>Scientific name</u>	<u>Common name</u>	<u>Plant Communities</u>
AMARYLLIDACEAE	AMARYLLIS FAMILY	
<u>Brodiaea coronaria</u> var. <u>macropoda</u>	Harvest Brodiaea	OG
<u>B. pulchella</u>	Blue Dicks or Wild Hyacinth	BG, IG, LG, LG, OG
<u>B. Laxa</u>	Grass Nut or Ithuriel's Spear	BG, IG, LG, LG, OG
IRIDACEAE	IRIS FAMILY	
<u>Iris Douglasiana</u>	Douglas Iris	BG, IG, LG, LG, LPG OG
<u>Sisyrinchium bellum</u>	Blue-eyed Grass	BG, IG, LG, LG, OG
<u>S. californicum</u>	Golden-eyed Grass	BG, LG, OG
JUNCACEAE	RUSH FAMILY	
<u>Juncus Bolanderi</u>	Bolander's Rush	FM
<u>J. buffonius</u>	Common Toad Rush	CC, FM
<u>J. effusus</u> var. <u>pacificus</u>	Common Rush, Bog Rush, or Soft Rush	CC, FM
CYPERACEAE	SEDGE FAMILY	
<u>Carex Lyngbyei</u>	Lyngbye's Sedge	FM
<u>C. obnupta</u>	Slough Sedge	FM
<u>Cyperus alternifolius</u>	Umbrella Plant	FM
<u>Scirpus</u> sp.	Club-rush, Bulrush, or Tule	FM
GRAMINEAE	GRASS FAMILY	
Festuceae Tribe	Fescue Tribe	
<u>Briza maxima</u>	Big Quaking Grass	Road side BG, BRG, IG, LG, LG, OG
<u>B. minor</u>	Little Quaking Grass	BG, LG, OG
<u>Bromus breviaristatus</u>		BG, BRG, IG, LG, LG, OG
<u>B. carinatus</u>	California Brome	BG, BRG, IG, LG, LG, OG
<u>B. marginatus</u>		BG, BRG, IG, LG, LG, OG
<u>B. mollis</u>	Soft Chess	BG, BRG, IG, LG, LG, OG
<u>B. rigidus</u>	Ripgut Grass	BG, BRG, IG, LG, LG, OG
<u>Cynosurus echinatus</u>	Dogtail	BG, CC, FM, LG, OG
<u>Dactylis glomerata</u>	Orchard Grass	BG, LG, OG
<u>Distichlis spicata</u> var. <u>stolonifera</u>	Seashore Salt Grass	SM
<u>Festuca dertonensis</u>	Fescue	BG, BRG, IG, LG, LG, OG
<u>F. Myuros</u>		BG, LG, OG
<u>F. rubra</u>	Red Fescue	BG, LG, OG
<u>Glyceria occidentalis</u>	Mannagrass	CC, FM
<u>Melica Geyeri</u> var. <u>aristulata</u>	Geyer Oniongrass	BG, LG, OG
<u>Poa annua</u>	Annual Blue-grass	BG, LG, OG
<u>P. bulbosa</u>	Bulbous Blue-grass	BG, LG, OG
<u>P. pratensis</u>	Kentucky Blue-grass	BG, LG, OG
<u>P. unilateralis</u>		BG, LG, OG

PLANT LIST FOR THE TULE ELK RANGE CONT'D

<u>Scientific name</u>	<u>Common name</u>	<u>Plant Communities</u>
GRAMINEAE	GRASS FAMILY	
Hordeae Tribe	Barley Tribe	
<u>Elymus glaucus</u>	Blue Wild-rye	BG, BRG, IG, LIG, LG, OG
<u>E. g. var. virescens</u>	Blue Wild-rye	BG, BRG, IG, LIG, LG, OG
<u>Hordeum brachyantherum</u>	Meadow Barley	BG, BRG, IG, LIG, LG, OG
<u>H. leporinum</u>		BG, BRG, IG, LIG, LG, OG
<u>Lolium multiflorum</u>	Italian Ryegrass	BG, BRG, IG, LIG, LG, OG
<u>L. perenne</u>	Perennial Ryegrass	BG, BRG, IG, LIG, LG, OG
<u>Monerma cylindrica</u>	Thintail	OG
Aveneae Tribe	Oat Tribe	
<u>Aira caryophylla</u>	Silver Hairgrass	BG, BRG, IG, LIG, LG, OG
<u>Avena barbata</u>	Slender Oat	BG, BRG, IG, LIG, LG, OG
<u>Danthonia californica</u>	California Oatgrass	BG, LG, OG
<u>Deschampsia caespitosa</u>	Tufted Hairgrass	BG, BRG, IG, LIG, LG, OG
var. <u>holciformis</u>		OG
<u>Holcus lanatus</u>	Velvet Grass	BG, FM, LG, OG
Agrostideae Tribe	Bentgrass Tribe	
<u>Agrostis diegoensis</u>	Thingrass	BG, LG, OG
<u>A. exarata</u>	Spike Bent	BG, LG, OG
<u>A. Hallii</u>		BG, LG, OG
<u>A. tenuis var. aristata</u>	Colonial Bent	BG, LG, OG
<u>Calamagrostis nutkaensis</u>	Pacific Reedgrass	BRG, CS, TS
<u>Polypogon monspeliensis</u>	Rabbitfoot Grass	CC, FM
<u>Stipa pulchra</u>	Purple Needlegrass	OG
Phalarideae Tribe	Canary Grass Tribe	
<u>Hierochloa occidentalis</u>	California Sweetgrass	
<u>Phalaris tuberosa</u>	Canary Grass	FM
var. <u>stenoptera</u>		

